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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,108	03/08/2001	Ashley Saulsbury	16747-017800	5576

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EXAMINER	
TREAT, WILLIAM M	
ART UNIT	**PAPER NUMBER**
2183	

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/802,108	SAULSBURY ET AL.	
	Examiner	Art Unit	
	William M. Treat	2183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 March 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-9 and 13-24* is/are rejected.

7)☒ Claim(s) *5 and 10-12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5, 7, and 8*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Claims 1-24 are presented for examination.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 6, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Keckler et al. (Patent No. 5,574,939).

4. Keckler taught the invention of claim 1 including a processing core (Fig. 2) comprising R-number processing pipelines (22) each comprising N-number of processing paths (Fig. 3), where in each of said R-number of processing pipelines (22) are synchronized (col. 4, line 62 through col. 5, line 10) to operate as a single very long instruction word (VLIW) processing core (col. 3, line 40 through col. 4, line 8), said VLIW processing core (Fig. 2) being configured to process RxN-number of VLIW sub-instructions in parallel (col. 6, lines 22-32).

5. As to claim 2, since each function unit within a cluster/pipeline acts independently, selecting operations to issue from any thread in the active set (col. 8, lines 25-28), the clusters/pipelines can inherently be configured to operate independently as separately operating pipelines, at least, to the extent the language of claim 2 defines such independent operation.

6. As to claim 3, Keckler taught each of the R-number of processing pipelines (22) comprises S-number of register files (50, 52), such that said processing core (Fig. 2) comprises RxS number of register files (4x2 in Keckler's invention).

7. As to claim 6, Keckler taught a single VLIW processing instruction comprises RxN-number of P-bit sub-instructions appended together (col. 6, lines 28-31).

8. As to claim 8, Keckler taught the processing core (Fig. 2) wherein each of said R-number of processing pipelines (22) comprise an execute stage which includes an execute unit for each of said N-number of processing paths, each of said execute units comprising an integer processing unit, a load/store unit, a floating point processing unit or any combination thereof (col. 6, lines 32-44).

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keckler et al. (Patent No. 5,574,939) in view of Rozenschein et al. (Patent No. 6,418,527).

12. Keckler taught the invention of claims 1 and 3 and claims 1, 3, and 8 from which claims 4 and 9 depend, respectively. (See paragraphs 4-8, *supra*.) Applicants' claims 4 and 9 are for having multiple functional units within a pipeline share one register file as opposed to having

two register files (50,52) for the functional units in a pipeline as taught by Keckler. However, as Rozenschein teaches, having one or two register files in such a situation is a matter of design (col. 5, lines 5-8). Keckler chose two register files for reasons of performance while one who was more concerned about the cost related to such a decision and less concerned about performance would be motivated to chose the one register file option.

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claim 7 recites the limitation "M=64, Q=64" in claim 6 which depends from independent claim 1. There is insufficient antecedent basis for this limitation in claims 1 and 6.

15. Claims 13-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

16. In applicants' claim 13 they claim "a computer system, a scaleable computer processing architecture, comprising: one or more processor chips" (i.e., they are claiming the situation in which there is only one processor chip). Subsequently in claim 13, applicants claim elements such as "said controller for controlling the exchange of data between a first one of said one or more processor chips and said other of said one or more processor chips". Applicant has claimed the situation in which there is only one processor chip and in which there can be no other processor chip with which to exchange data; therefore, the language of applicants' claim 13 and claims 14-24, which depend from it, is internally inconsistent. If there is only one processor chip, certain elements of applicants' claim 13 do not perform the functions claimed for them. If

those same elements perform the function claimed for them, then applicants cannot claim a system with only one processor chip as they have.

17. Claims 5 and 10-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

18. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

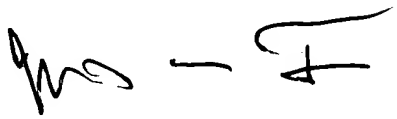
19. Shiell et al. (Patent No. 6,317,820).

20. Nishioka et al. (Patent No. 6,401,190).

21. Arora et al. (Patent No. 6,629,232).

22. Any inquiry concerning this communication should be directed to William M. Treat at telephone number 703 305 9699. The examiner works at home on Wednesdays but may normally be reached on Wednesdays by leaving a voice message using his office phone number. The examiner also works a flexible schedule but may normally be reached in the afternoon and evening on three of the four remaining weekdays.

23. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



WILLIAM M. TREAT
PRIMARY EXAMINER